Owner's Manual:
PSHV SERIES WINCHES
The PHVS series winch is a powerful tool and must be used with extreme care. Deviating from the manual’s instructions may cause personal injury. You may lose your warranty if you do not follow the precautions and guidelines outlined in this manual. Keep this manual in a safe place to reference safety and installation instructions, maintenance guidelines and operating recommendations. The owner, operator and installer must read the entire owner manual before operating the winch.

**Shipment Contents**

1 – Winch  
8 – Bolts  
8 – Lock Washers  
1 – Owner’s Manual

**Recommended Tools**

3/4” Wrench or Socket  
13/16” Wrench or Socket  
15/16” Wrench or Socket  
Crowbar  
Gloves  
Safety Glasses  
Tree Saver Strap  
Safety Cut Off Switch  
First Aid Kit  
Bow Shackles  
Chains or Straps  
Wheel Blocks or Choks  
Heavy Blanket

**Safety Precautions**

**DRESS PROPERLY**

- DO NOT wear loose fitting clothing or jewelry.  
- Tie back long hair.  
- Wear leather gloves when handling the wire rope.  
- Wear non-skid footwear during winch operation.  
- Wear eye and ear protection during operation.

**KEEP A SAFE DISTANCE**

- DO NOT step over or under the wire rope.  
- All onlookers must keep away from the work area.  
- Never work on or around the winch drum when the winch is operating.  
- DO NOT alter your winch in any way. Alterations may weaken the structural integrity of the winch and void your warranty.  
- Operate your winch with an unobstructed view.  
- Read the following safety information carefully before attempting to operate your winch. Keep this manual for future reference.

**DO NOT MISUSE YOUR WINCH**

- DO NOT lift items vertically. The winch was designed for horizontal use only.  
- **DO NOT** operate the winch with less than eight wraps on the drum. The set screw on the drum is not designed to hold pull force of cable.  
- **DO NOT** use as to hold or secure a load. The winch is not to be used as a tie down.  
- Avoid continuous pulls from extreme angles. This will cause the wire rope to jam as it piles up on one side.  
- Use a nylon sling when winching. Hooking the wire rope to itself will cause considerable damage to the wire rope.  
- **DO NOT** move your vehicle to assist the winch in pulling the load. The combination of the winch and vehicle pulling could overload the wire rope and winch.  
- Never release the free spool clutch when a load is connected to the winch.  
- **DO NOT** exceed the pulling limitations of this winch.  
- **DO NOT** shock loads when winching. A shock load occurs when increased force is suddenly applied to the wire rope.  
- **DO NOT** use your winch as a hoist.  
- **DO NOT** use your winch to lift, support or transport people.  
- **DO NOT** alter the warning instruction labels.  
- **DO NOT** overheat your winch. Use your winch intermittently.  
- Only use your winch for direct winching. Do not use your winch for jerking loads, towing or securing a load. Any damage incurred as a result of such action will void the warranty.  
- **DO NOT** winch near electrical power lines.

**DO NOT ABUSE THE WIRE ROPE**

- Never carry your winch by the wire rope.  
- Never yank the wire rope from the winch.  
- Keep the wire rope from heat or sharp edges.  
- **The cable must be spooled from the bottom of the drum.**

**DO NOT OVERWORK YOUR WINCH**

- **DO NOT** maintain power if the motor stalls.  
- **DO NOT** exceed maximum line pull ratings.  
- **DO NOT** overload your winch’s pulling capacity. We recommend the use of a pulley block to double line the wire rope on heavy loads.

**General Safety Information**

**Specifications**

**Operation Recommendations**

**Parts Diagram**

**Warranty**
Avoid Unintentional Starting
- The winch clutch must be disengaged when not in use and fully engaged when in use.

Maintain Your Winch
- Before use, you must check your winch carefully.
- Damaged equipment must be properly repaired or replaced by the manufacturer or an authorized service center.
- Inspect and maintain the wire rope and winch frequently.
- Replace frayed rope strands immediately.
- Use only factory approved switches, remote controls and accessories.
- Check the tightness of the mounting bolts and electrical connections periodically.

Re-spool the Wire Rope
- Wear leather gloves while re-spooling.
- Attention: DO NOT allow the wire rope thread through your hand.
- Keep a slight load on the wire rope while re-spooling. Hold the wire rope with one gloved hand and the remote control in the other.

Installation

Mounting
- Before installation ensure the mounting frame in use is capable of withstanding the winch’s rated capacity.
- Ensure the motor, wire rope, drum and gear housing is properly aligned.
- Winch shall be mounted on a flat and hard surface.
- Winch should be mounted as close to center and as perpendicular as possible to the direction of the line pull.
- Wire rope shall be wound in an under-wound orientation only.
- Use the following high tensile G8 steel bolts:
  - PSHV10000 - Eight (8) 1/2 - 13
  - PSHV15000 - Eight (8) 9/16 - 12
  - PSHV18000 - Eight (8) 9/16 - 12
  - PSHV20000 - Eight (8) 5/8 - 11
- It is always preferred to use both tie bars in the final installed configuration.
- Mount the roller guide in front of the winch. Do not attach the roller guide to the winch.
- The cable must be spooled from the bottom of the drum.

Hydraulic Connections
- 2x male JIC fittings on the motor (8MJIC)

Wire Rope Preparation
Note: The first use of your winch must be a test run during a non-recovery situation. During this trial run begin to recognize the sound of a steady pull, a heavy pull, load jerking or shifting.
- Spool the wire rope.
- Wear leather gloves while spooling. Attention: DO NOT allow the wire rope thread through your hand.
- Unwind the wire rope carefully along the floor to avoid kinking.
- Place the end of the wire rope in to the hole on the side of the drum. The wire rope will protrude ½” - 1”. Tighten the set screw.
- Keep a slight load on the wire rope while spooling.
- Using the remote control, wrap the wire rope on to the drum until the load is recovered. During operation, make sure the wire rope lays smoothly on to the drum without spacing or overlapping.
- Spool the wire rope until the red mark appears at five wraps.
- Under a load of 500 lbs (230 kg) re-spool the wire rope.
- This will stretch the new wore rope and create a tight wrap around the drum.
- If there is a rope pileup on one end of the drum, reverse the winch to relieve the load and move your anchor point further to the center of the vehicle. Then you can rewind for a neat layer of the rope.

Operation
- Apply the parking brake or lock the wheels.
- While the clutch is in the OUT position spool the wire cable and connect to an anchor point.
- Check cable rigging before proceeding.
- Plug in the winch remote control.
- Engage the clutch by shifting it into the IN position. NOTE: When the clutch is engaged your load may begin to drift until the remote is used to recover your load. To ensure safe operation, it is recommended that winch operation take place from the driver’s position.
- Start vehicle engine, select neutral or park and maintain idle engine speed.
- Using the remote control, press IN or OUT until the vehicle has been retrieved. Regularly check the winch to ensure the cable is winding onto the drum evenly. It is recommended you secure the load using chains or straps at this point.
- Detach the load.
- Re-spool the wire rope after the winch operation is completed.

Maintenance

It is highly recommended that you regularly use your winch. Simply power the cable out 15 feet, free spool five feet and power in. This will keep all components in good condition so that the winch can be ready when needed. Contact the manufacturer or authorized outlet for technical assistance and repairs.

Lubrication
1. The gearbox has been lubricated using high temperature lithium grease at the factory. No internal lubrication is required.
2. Lubricate cable periodically using light penetrating oil. Inspect for broken or worn strands and replace if necessary.

Rope
1. Use aircraft grade cable or approved and rated synthetic rope.
2. The life of the rope is directly related to the use and care it receives.
3. Replace damaged or frayed rope with manufacturer’s identical replacement part.
4. Be sure the rope is in good condition and is properly attached.
5. DO NOT use the winch if the rope is frayed.
6. When the rope is replaced, apply Loctite 7471 primer or 222 Threaddoctor to the wire rope clamp to prevent the loosening of the screw.

Spare Parts
1. A comprehensive range of spare parts is available. Please contact the manufacturer, Pierce Arrow at 940-538-5643 for more information.
2. DO NOT attempt to disassemble the gearbox. Disassembly may void the warranty. Call Pierce Arrow at 940-538-5643 before repairs are made.
<table>
<thead>
<tr>
<th></th>
<th>PSHV10000</th>
<th>PSHV15000</th>
<th>PSHV18000</th>
<th>PSHV20000</th>
</tr>
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<tbody>
<tr>
<td><strong>Rated line pull</strong></td>
<td>10,000 lb.</td>
<td>15,000 lb.</td>
<td>18,000 lb.</td>
<td>20,000 lb.</td>
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<tr>
<td><strong>Line speed</strong></td>
<td>46 fpm at 15.9 gpm</td>
<td>30 fpm at 15.9 gpm</td>
<td>23 fpm at 15.9 gpm</td>
<td>7.1 fpm at 15.9 gpm</td>
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<tr>
<td><strong>Operation pressure</strong></td>
<td>2,175 psi</td>
<td>2,175 psi</td>
<td>2,175 psi</td>
<td>2,175 psi</td>
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<tr>
<td><strong>Max oil flow</strong></td>
<td>15.9 gpm</td>
<td>15.9 gpm</td>
<td>15.9 gpm</td>
<td>15.9 gpm</td>
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<tr>
<td><strong>Hydraulic motor</strong></td>
<td>5.9 in³ / rev</td>
<td>7.6 in³ / rev</td>
<td>9.5 in³ / rev</td>
<td>9.5 in³ / rev</td>
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<tr>
<td></td>
<td></td>
<td></td>
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<td>Danfoss OMP-160</td>
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<tr>
<td><strong>Gear ratio</strong></td>
<td>2-stage planetary gear 16:1</td>
<td>2-stage planetary gear 16:1</td>
<td>2-stage planetary gear 16:1</td>
<td>2-stage planetary gear 30:1</td>
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<tr>
<td><strong>Winch construction</strong></td>
<td>Aluminum die cast housings with steel drum</td>
<td>Aluminum die cast housings with steel drum</td>
<td>Aluminum die cast housings with steel drum</td>
<td>Aluminum die cast housings with steel drum</td>
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<tr>
<td><strong>Clutch</strong></td>
<td>Rotating ring gear</td>
<td>Rotating ring gear</td>
<td>Rotating ring gear</td>
<td>Rotating ring gear</td>
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<tr>
<td><strong>Brake</strong></td>
<td>Spring applied drag brake together with over-center valve supplied</td>
<td>Spring applied drag brake together with over-center valve supplied</td>
<td>Spring applied drag brake together with over-center valve supplied</td>
<td>Multidisc brake</td>
</tr>
<tr>
<td><strong>Rotation of winch</strong></td>
<td>Underwound</td>
<td>Underwound</td>
<td>Underwound</td>
<td>Underwound, air spool</td>
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<tr>
<td><strong>Drum barrel diameter</strong></td>
<td>4”</td>
<td>4”</td>
<td>4”</td>
<td>5.8”</td>
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<tr>
<td><strong>Drum flange diameter</strong></td>
<td>9.9”</td>
<td>9.9”</td>
<td>9.9”</td>
<td>12.4”</td>
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<tr>
<td><strong>Distance between flanges</strong></td>
<td>10”</td>
<td>10”</td>
<td>10”</td>
<td>14”</td>
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<tr>
<td><strong>Mounting bolts pattern</strong></td>
<td>11.5” x 6.7”</td>
<td>12” x 4.5”</td>
<td>12” x 4.5”</td>
<td>18” x 7.5”</td>
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<tr>
<td></td>
<td>14.7” x 4.5”</td>
<td>14.5” x 6.7”</td>
<td>14.5” x 6.7”</td>
<td>18” x 10.5”</td>
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<td><strong>Wire rope recommended</strong></td>
<td>3/8” x 100’</td>
<td>1/2” x 165’</td>
<td>1/2” x 165’</td>
<td>9/16” x 250’</td>
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<tr>
<td><strong>Winch weight</strong></td>
<td>81.4 lb</td>
<td>158.7 lb</td>
<td>158.7 lb</td>
<td>331 lb</td>
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<tr>
<td><strong>Gross weight</strong></td>
<td>102.5 lb</td>
<td>194 lb</td>
<td>194 lb</td>
<td>380 lb</td>
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<tr>
<td><strong>Winch dimensions (LxWxH)</strong></td>
<td>24.6” x 9.4” x 9.7”</td>
<td>26.9” x 11.4” x 11.3”</td>
<td>27.1” x 11.4” x 11.3”</td>
<td>34.6” x 14.6” x 13”</td>
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<tr>
<td><strong>Box dimensions (LxWxH)</strong></td>
<td>26.2” x 14.6” x 11.2”</td>
<td>28.1” x 16.3” x 12.2”</td>
<td>28.1” x 16.3” x 12.2”</td>
<td>Shipped in crate or pallet individually</td>
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**DIMENSIONS, LINE SPEEDS, REPLACEMENT PARTS**

PSHV10000

<table>
<thead>
<tr>
<th>Layers of Wire Rope</th>
<th>Pull (lb.)</th>
<th>Wire Rope (ft.)</th>
<th>Speed (@ 15.9 gpm)</th>
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<td>8,369</td>
<td>57.4 ft.</td>
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<td>3</td>
<td>7,196</td>
<td>89 ft.</td>
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<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>PART NO.</th>
<th>QTY</th>
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<tbody>
<tr>
<td>1</td>
<td>HYDRAULIC MOTOR KIT</td>
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<tr>
<td>2</td>
<td>OVER CENTER VALVE</td>
<td>880145</td>
<td>1</td>
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<tr>
<td>3</td>
<td>MOTOR SUPPORT RACK</td>
<td>882093</td>
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<tr>
<td>4</td>
<td>TIE BAR KIT</td>
<td>880163</td>
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</tr>
<tr>
<td>5</td>
<td>TIE BAR KIT</td>
<td>881172</td>
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<td>6</td>
<td>DRUM BUSHING</td>
<td>880048</td>
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<td>7</td>
<td>DRUM KIT</td>
<td>881173</td>
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<td>8</td>
<td>CONNECTING SHAFT KIT</td>
<td>880165</td>
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<td>9</td>
<td>GEARBOX SUPPORT RACK</td>
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<td>10</td>
<td>2ND STAGE CARRIER</td>
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<td>1ST STAGE CARRIER</td>
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<td>12</td>
<td>RING GEAR</td>
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<td>13</td>
<td>1ST SHAFT KIT</td>
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<td>14</td>
<td>CLUTCH KIT</td>
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<td>GEAR BOX KIT</td>
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<td>16</td>
<td>DRAG BRAKE KIT</td>
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<tr>
<td>17</td>
<td>BRAKE DISC</td>
<td>881127</td>
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<td>18</td>
<td>BRAKE SPRING</td>
<td>881128</td>
<td>1</td>
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<tr>
<td>19</td>
<td>BRAKE COVER KIT</td>
<td>881138</td>
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</tr>
<tr>
<td>20</td>
<td>ROLLER FAIRLEAD</td>
<td>880180</td>
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DIMENSIONS, LINE SPEEDS, REPLACEMENT PARTS

PSHV15000

<table>
<thead>
<tr>
<th>Layers of Wire Rope</th>
<th>Pull (lb.)</th>
<th>Wire Rope (ft.)</th>
<th>Speed (@ 15.9 gpm)</th>
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<tbody>
<tr>
<td>1</td>
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<td>23.3 ft.</td>
<td>30 fpm</td>
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<td>2</td>
<td>12,273</td>
<td>51.5 ft.</td>
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<td>3</td>
<td>10,390</td>
<td>85 ft.</td>
<td>42 fpm</td>
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ITEM NO.  DESCRIPTION  PART NO.  QTY
1 HYDRAULIC MOTOR KIT 880182 1
2 OVER CENTER VALVE 880145 1
3 MOTOR SUPPORT RACK 880279 1
4 TIE BAR KIT 880130 1
5 TIE BAR KIT 880131 1
6 DRUM BUSHING 880282 2
7 DRUM KIT 880167 1
8 CONNECTING SHAFT KIT 880168 1
9 GEARBOX SUPPORT RACK 882289 1
10 2ND RING GEAR KIT 882291 1
11 2ND STAGE CARRIER 880171 1
12 1ST STAGE CARRIER 880172 1
13 1ST RING GEAR 880173 1
14 1ST SHAFT KIT 880174 1
15 CLUTCH KIT 882214 1
16 GEAR BOX KIT 880176 1
17 DRAG BRAKE KIT 880177 1
18 BRAKE DISC 881175 1
19 BRAKE SPRING 881128 1
20 BRAKE COVER KIT 880178 1
21 ROLLER FAIRLEAD 880180 1
22 GEAR BOX KIT B 882293 1
23 STEEL RING 882294 1
24 TAP SCREW 881423 1
DIMENSIONS, LINE SPEEDS, REPLACEMENT PARTS

<table>
<thead>
<tr>
<th>Layers of Wire Rope</th>
<th>Pull (lb.)</th>
<th>Wire Rope (ft.)</th>
<th>Speed (@ 15.9 gpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20,000</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>2</td>
<td>17,017</td>
<td>49</td>
<td>27</td>
</tr>
<tr>
<td>3</td>
<td>14,813</td>
<td>79</td>
<td>31</td>
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ITEM NO. | DESCRIPTION         | PART NO. | QTY |
---|---------------------|----------|-----|
1 | HYDRAULIC MOTOR KIT | 880182   | 1   |
2 | OVER CENTER VALVE   | 881318   | 1   |
3 | MOTOR SUPPORT RACK  | 882017   | 1   |
4 | TIE BAR KIT         | 880130   | 1   |
5 | TIE BAR KIT         | 880131   | 1   |
6 | DRUM BUSHING        | 880282   | 2   |
7 | DRUM KIT            | 882018   | 1   |
8 | CONNECTING SHAFT KIT| 880168   | 1   |
9 | GEARBOX SUPPORT RACK| 882304 | 1   |
10 | 2ND RING GEAR KIT   | 882292   | 1   |
11 | 2ND STAGE CARRIER   | 880171   | 1   |
12 | 1ST STAGE CARRIER   | 880172   | 1   |
13 | GEAR BOX KIT B      | 882306   | 1   |
14 | 1ST SHAFT KIT       | 880174   | 1   |
15 | CLUTCH KIT          | 882214   | 1   |
16 | GEAR BOX KIT        | 882307   | 1   |
17 | DRAG BRAKE KIT      | 881339   | 1   |
18 | BRAKE DISC          | 881715   | 1   |
19 | BRAKE SPRING        | 881128   | 1   |
20 | BRAKE COVER KIT     | 882308   | 1   |
21 | ROLLER FAIRLEAD     | 880180   | 1   |
## Layers of Wire Rope

<table>
<thead>
<tr>
<th>Layers of Wire Rope</th>
<th>Pull (lb.)</th>
<th>Wire Rope (ft.)</th>
<th>Speed (@ 15.9 gpm)</th>
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<tr>
<td>1</td>
<td>20,000</td>
<td>23 ft.</td>
<td>23 fpm</td>
</tr>
<tr>
<td>2</td>
<td>17,017</td>
<td>49 ft.</td>
<td>27 fpm</td>
</tr>
<tr>
<td>3</td>
<td>14,813</td>
<td>79 ft.</td>
<td>31 fpm</td>
</tr>
</tbody>
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## DIMENSIONS, LINE SPEEDS, REPLACEMENT PARTS

### ITEM NO. DESCRIPTION                  PART NO. QTY
1. HYDRAULIC MOTOR KIT, OMP-160    882186 1
2. MULTI-DISC BRAKE KIT            881971 1
3. MOTOR SUPPORT RACK              882142 1
4. MOTOR COUPLING KIT              881973 1
5. DRUM BUSHING                    880187 2
6. DRUM KIT, STD. DRUM             882143 1
7. 1 TIE BAR KIT, STD. DRUM        881975 1
8. GEARBOX SUPPORT RACK KIT        882144 1
9. 2ND STAGE CARRIER               882145 1
10. 1ST STAGE CARRIER              882146 1
11. 1ST SHAFT KIT, STD. DRUM       882147 1
12. 1ST GEAR                       882052 1
13. 1ST & 2ND RING GEAR KIT        882148 1
14. GEARBOX REAR COVER KIT         882149 1
15. AIR INLET COVER KIT            881982 1
16. CABLE TENSIONER, STD. DRUM     881983 1
Pierce Arrow Product Limited Warranty

Pierce Arrow, Inc. warrants to the original purchaser only (whether a wholesale, OEM or retail customer) that the goods, equipment, and merchandise manufactured by Pierce Arrow are free from defects in material and workmanship. The Pierce Arrow limited warranty on parts covers such items for a period of one year on mechanical and electrical from the date of shipment by Pierce Arrow. All warranties cover only the product or product parts, and are nontransferable.

OBTAINING WARRANTY SERVICE

Pierce Arrow must be notified promptly in writing, about the defect before any means of repair have been made. The merchandise must be delivered by the purchaser to Pierce Arrow in Henrietta, Texas at the purchaser’s expense. Pierce Arrow reserves the right to repair or replace the merchandise proved to be defective. The purchaser is responsible for the cost of repairs made by Pierce Arrow if the repairs are not covered by the Pierce Arrow warranty.

EXCLUSIONS

The Pierce Arrow warranty is not intended to cover normal maintenance parts, including but not limited to: wire rope, oil leakage and remote holdings. Nor is the warranty intended to cover any change or defect due to accident; misuse; improper, inadequate or unauthorized repair; failure to provide maintenance or uses for which the equipment was not intended; and normal deterioration due to weather or road conditions. Reference the owner’s manual for safety, installation, operation and maintenance guidelines.

The warranty does not bear the cost of labor, transportation, shipping damages, claimed down time, loss of profit or goodwill, or any other special, incidental, indirect, or consequential damages, concerning or related to any product or part, whether based upon negligence, strict liability, breach of contract, breach of warranty, misrepresentation, or any other legal theory.

Merchandise sold by Pierce Arrow, but not manufactured by it, is not warranted by Pierce Arrow and is subject to the manufacturer’s warranty only. The manufacturer’s warranty is available upon request.

Pierce Arrow makes no warranty, expressed or implied, to finished products manufactured or supplied by other manufacturers, and supplied from Pierce Arrow to the purchaser, including but not limited to, any vehicle to which our products is affixed to, and any accessories.

Merchandise manufactured by Pierce Arrow is not designed or intended for the movement of people and are not to be used in the operation of elevators or other improper uses. Any improper use of the product may void the warranty.

Please contact Pierce Arrow with any questions:

Pierce Arrow Inc.
549 U.S. Highway 287 S.
Henrietta, Texas 76365
(toll free) 800-658-6301
P: 940-538-5643
F: 940-538-4382
www.piercearrowinc.com